Pending Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently Amended) A method for measuring and analyzing data contained within pulses of an analog electronic signal derived from optical measurements in a flow cytometer, the electronic signal comprising a first data channel, the method comprising the steps of:

   (a) removing a DC offset from the signal with a base line restoration circuit to obtain a base line restored signal, wherein the DC offset is locked during the pulses;

   (b) transforming the base line restored signal with a logarithmic amplifier;

   (c) sampling the transformed signal with an analog-to-digital converter so as to produce a digital signal; and

   (d) analyzing the digital signal with an electronic processor.

2. (Original) The method of claim 1, wherein the processor performs peak sample and hold analysis upon the digital signal.

3. (Original) The method of claim 1, wherein the processor further analyzes a second digital signal comprising a second data channel of the flow cytometer.

4. (Cancelled)

5. (Previously Presented) The method of claim 1, comprising the further step, between the transforming step (b) and the sampling step (c) of calibrating a gain of the transformed signal.

6. (Previously Presented) The method of claim 1, comprising the further steps of:

(e) controlling a digital-to-analog converter based upon the signal analysis performed by the processor; and

(f) inputting a DC voltage from the digital-to-analog converter to the base line restoration circuit.

7. (Original) The method of claim 1, wherein the processor calibrates for errors in the transformed signal output of the logarithmic amplifier.

8. (Previously Presented) The method of claim 7, wherein the calibration is performed using a lookup table for correcting output values of the analog-to-digital converter.

9. (Original) The method of claim 1, wherein the analog-to-digital converter samples at a lower bit resolution than is required to analyze the signal prior to the transforming step (b).

10. (Currently Amended) A system for measuring and analyzing data contained within pulses of an electronic signal derived from optical measurements in a flow

cytometer, the electronic signal comprising a first data channel, the system comprising:

a base line restoration circuit that receives ~~receiving~~ and removes ~~removing~~ a DC offset from the electronic signal, wherein the DC offset is locked during the pulses;

a logarithmic amplifier that receives ~~receiving~~ the signal from the base line restoration circuit and transforms ~~transforming~~ the signal;

an analog-to-digital converter that receives ~~receiving~~ the transformed signal from the logarithmic amplifier and produces ~~producing~~ a digital signal; and

an electronic processor that receives ~~receiving~~ the digital output from the analog-to-digital converter.

11. (Original) The system of claim 10, wherein the processor performs peak sample and hold analysis upon the digital signal.

12. (Original) The system of claim 10, wherein the processor further analyzes a second digital signal comprising a second data channel of the flow cytometer.

13. (Cancelled)

14. (Previously Presented) The system of claim 10, wherein a gain of the transformed signal is calibrated.

15. (Currently Amended) The system of claim 10, further comprising:

a digital-to-analog converter that receives ~~receiving~~ a digital signal from the processor and provides ~~providing~~ a DC voltage to the base line restoration circuit.

16. (Original) The system of claim 10, wherein the processor calibrates for errors in the transformed signal output of the logarithmic amplifier.

17. (Previously Presented) The system of claim 16, wherein the calibration is performed using a lookup table for correcting output values of the analog-to-digital converter.

18. (Original) The system of claim 10, wherein the analog-to-digital converter samples at a lower bit resolution than is required to analyze the signal prior to its being input to the logarithmic amplifier.